

REMARKS

The applicants appreciate the Examiner's thorough examination of the Application and request reexamination and reconsideration of the Application in view of the following remarks.

The subject invention results from the realization that an improved isolation system with analog communication across an isolation barrier, which can accommodate both ADSL and POTS and can use transformers or capacitors, is achieved with a novel isolation barrier circuit. The isolation barrier circuit has at least one isolation element, a digital to analog circuit with an analog output connected to the isolation barrier and an input for receiving an input digital signal to be communicated across the isolation barrier. An analog to digital circuit has an input coupled to the analog output of the isolation barrier circuit for providing a digital output signal. It was further realized that performance could be enhanced by shaping the analog signal to be transmitted through the isolation barrier so that it exhibited a constant signal average.

Claims 1-7, 13-16 and 21-25 stand rejected under 35 U.S.C. §103(a) as allegedly being obvious in light of U.S. Patent No. 5,550,993 to Ehlig et al in view of U.S. Patent No. 4,539,552 to Davis et al. Ehlig et al. describes a data processing device and method of operation with content switching. Fig. 10 of Ehlig shows a digital to analog (D/A) converter used with a data access arrangement (DAA). The output of the DAA can be fed to an analog to digital converter (A/D). However, Ehlig et al. does not describe the construction of the DAA nor its components. Moreover, Ehlig et al. does not describe or suggest that the signal supplied to the DAA is a constant average signal, as claimed by the applicants.

To overcome the deficiencies of Ehlig et al., the Examiner combines it with Davis et al.

Davis et al. recites the use of a constant average output signal in its claim 5, although it is silent elsewhere in its disclosure about such an output. In an attempt to provide the motivation to combine these two references, the Examiner states that since "[Ehlig et al.] do not describe the construction of the digital to analog (D/A) converter 539 [, one] of the ordinary skill in the art would have been motivated to seek any D/A circuit suitable to receive a digital input and convert the digital input into an analog output, such as the D/A circuit of Davis et al[.]"

The lack of a description of Ehlig et al.'s D/A circuit construction, however, is not an appropriate teaching, motivation, or suggestion to combine the teachings of Ehlig et al. with another reference.

When patentability turns on the question of obviousness, the search for and analysis of the prior art includes evidence relevant to the finding of whether there is a teaching, motivation, or suggestion to select and combine the references relied on as evidence of obviousness. See, e.g., McGinley v. Franklin Sports, Inc., 262 F.3d 1339, 1351-52, 60 USPQ2d 1001, 1008 (Fed. Cir. 2001) ("the central question is whether there is reason to combine [the] references," a question of fact drawing on the Graham factors).

"The factual inquiry whether to combine references must be thorough and searching." Id. It must be based on objective evidence of record. This precedent has been reinforced in myriad decisions, and cannot be dispensed with. See, e.g., Brown & Williamson Tobacco Corp. v. Philip Morris Inc., 229 F.3d 1120, 1124-25, 56 USPQ2d 1456, 1459 (Fed. Cir. 2000) ("a showing of a suggestion, teaching, or motivation to combine the prior art references is an 'essential component of an obviousness holding'") (quoting C.R. Bard, Inc., v. M3 Systems, Inc., 157 F.3d 1340, 1352, 48 USPQ2d 1225, 1232 (Fed. Cir. 1998)); In re Dembiczak, 175 F.3d 994, 999, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999) ("Our case law makes clear that the best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis is rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references."); In re Dance, 160 F.3d 1339, 1343, 48 USPQ2d 1635, 1637 (Fed. Cir. 1998) (there must be some motivation, suggestion, or teaching of the desirability of making the specific combination that was made by the applicant); In re Fine, 837 F.2d 1071, 1075, 5 USPQ2d 1596, 1600 (Fed. Cir. 1988) ("teachings of references can be combined only if there is some

suggestion or incentive to do so.") (emphasis in original) (quoting ACS Hosp. Sys., Inc. v. Montefiore Hosp., 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984)).

The need for specificity pervades this authority. See, e.g., In re Kotzab, 217 F.3d 1365, 1371, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000) ("particular findings must be made as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed"); In re Rouffet, 149 F.3d 1350, 1359, 47 USPQ2d 1453, 1459 (Fed. Cir. 1998) ("even when the level of skill in the art is high, the Board must identify specifically the principle, known to one of ordinary skill, that suggests the claimed combination. In other words, the Board must explain the reasons one of ordinary skill in the art would have been motivated to select the references and to combine them to render the claimed invention obvious."); In re Fritch, 972 F.2d 1260, 1265, 23 USPQ2d 1780, 1783 (Fed. Cir. 1992) (the examiner can satisfy the burden of showing obviousness of the combination "only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references").

In re Sang Su Lee, 277 F. 3d 1338, 61 USPQ2d 1430 (Fed. Cir. 2002).

In this case, there is no suggestion that Ehlig et al.'s D/A converter could output a constant average output signal as claimed by the Applicants, nor is there any suggestion that Davis et al.'s D/A converter having a constant average output level could be used in Ehlig et al.'s data processor. In fact, with one exception in claim 5, Davis et al. is nearly silent about the use of a constant average output signal. Nonetheless, the Examiner asserts that the lack of a teaching or suggestion in Ehlig et al. provides the very motivation itself to combine it with Davis et al. Only the Applicants' own disclosure teaches how an isolation system with analog communication across an isolation barrier may include a digital to analog circuit configured to provide a constant average analog output signal to the isolation barrier, and it is improper to use the Applicants' disclosure as a blue print for conducting a hindsight §103 analysis.

In contrast to Ehlig et al., claim 1 of the subject application recites a digital to analog circuit configured to provide a constant average analog output signal. As noted in the subject application at page 8, lines 13-18 and at page 12, lines 17-20, an encoder or a modulator, for example, can be used to provide the constant average signal. As further noted in the subject application, a benefit of using a constant average signal is that it will pass normally through an isolation barrier. Claim 21, as amended, recites similar features that distinguish over the cited references. Ehlig et al. does not disclose or suggest the use of a constant average signal across an isolation barrier circuit.

More specifically, claim 1 of the subject application recites: “An isolation system with analog communication across an isolation barrier comprising: an isolation barrier circuit having a least one isolation element; a digital to analog circuit configured to provide a constant average analog output signal to the isolation barrier and having an input for receiving an input digital signal to be communicated across the isolation barrier; and an analog to digital circuit having an input coupled to the analog output of the isolation barrier circuit for providing a digital output signal.” (Emphasis added.) Ehlig et al. does not disclose or suggest a digital to analog circuit configured to provide a constant average analog output signal to an isolation barrier circuit.

Since Ehlig et al. does not provide any motivation to combine it with Davis et al., the Examiner's combination of these references is improper.

Accordingly, claims 1-7, 13-16 and 21-24 are patentable over the prior art. Applicants respectfully request that the Examiner withdraw the rejection of these claims under 35 U.S.C. §102(b).

Claims 10, 12 and 19-20 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Ehlig et al. in view of Davis and in view of U.S. Patent No. 5,500,895 to



Yurgelites. Also, claims 8-9 and 11 stand rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Ehlig et al. in view of Davis and in view of either U.S. Patent No. 6,587,560 to Scott et al. or U.S. Patent No. 6,081,586 to Rahamin et al. Also, claim 12 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Ehlig et al. in view of Davis and in view of U.S. Patent No. 4,387,273 to Chea, Jr. However, none of the Yurgelites, Scott, Rahamin or Chea, Jr. references discloses or suggests a digital to analog circuit configured to provide a constant average analog output signal to an isolation barrier. Since each of these claims rejected under 35 U.S.C. §103(a) depend from claim 1, they are thus patentable for the reasons stated above and further patentable because these dependent claims contain one or more additional features.

Each of the Examiner's rejections has been addressed or traversed. Accordingly, it is respectfully submitted that the application is in condition for allowance. Early and favorable action is respectfully requested.

If for any reason this Response is found to be incomplete, or if at any time it appears that a telephone conference with counsel would help advance prosecution, please telephone the undersigned or his associates, collect in Waltham, Massachusetts, at (781) 890-5678.

Respectfully submitted,

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